

lenses 34a, 34b and 34c each identical to the lens 30 and the prisms 35a, 35b and 35c each identical to the prism 11, so that the microscope can be constructed easily and at a low cost.

It should be apparent to those skilled in the art that the present invention is not limited to the above-described embodiments, but may be embodied in many other specific forms without departing from the spirit or scope of the invention.

Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details and representative embodiments shown and described herein. Accordingly, various modifications may be made without departing from the spirit or scope of the general inventive concept as defined by the appended claims and their equivalents.

What is claimed is:

1. A scanning optical microscope comprising:

a laser source;

a scan optical system for scanning a sample with a laser beam from said laser source;

a spectral resolving optical system for resolving spectra of fluorescent rays from said sample;

a wavelength splitting optical system for splitting said fluorescent rays that have passed said spectral resolving optical system into rays of a plurality of different wavelengths and guiding said split rays to optical paths of said plurality of different wavelengths;

a plurality of image forming optical systems, respectively provided in said optical paths of said plurality of different wavelengths, for forming images of said fluorescent rays from said sample;

a plurality of confocal apertures respectively provided in said optical paths at focal points of said image forming optical systems; and

a plurality of photosensors, respectively provided in said optical paths, for sensing said fluorescent rays from said sample that have passed the respective confocal apertures.

2. The scanning optical microscope according to claim 1, wherein said spectral resolving optical system includes:

a first optical element for resolving said spectra of said fluorescent rays from said sample; and

a second optical element for transforming a bundle of rays resulting from spectral resolving by said first optical element back to a bundle of parallel rays.

3. The scanning optical microscope according to claim 1, further comprising a reducing optical system, provided closer to a sample side than said spectral resolving optical system, for reducing a bundle of rays incident to said spectral resolving optical system.

4. The scanning optical microscope according to claim 1, wherein the numbers of said image forming optical systems, said confocal apertures and said photosensors are equal to the number of fluorescent rays to be sensed; and

said wavelength splitting optical system has wavelength splitting optical elements smaller in number by one than said number of said photosensors.

5. The scanning optical microscope according to claim 4, further comprising an optical-element positioning drive mechanism for positioning said wavelength splitting optical elements.

6. The scanning optical microscope according to claim 5, wherein said optical-element positioning drive mechanism positions said wavelength splitting optical elements in a direction perpendicular to an incident optical axis.

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